



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,180	11/26/2003	Jong Chul Bang	K-0585	6620
34610	7590	12/18/2006	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			PERRIN, JOSEPH L	
		ART UNIT	PAPER NUMBER	
		1746		
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/18/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,180	BANG, JONG CHUL	
	Examiner Joseph L. Perrin, Ph.D.	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 23 November 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Information Disclosure Statement

1. It is noted that an Information Disclosure Statement under 37 CFR 1.97 for the present application has not been received by the Office. If Applicant believes this to be in error, Applicant is urged to submit documentation supporting a proper filing of any previously submitted information disclosure statements in order to have such disclosures considered by the Office.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The following title is suggested: "Washing Machine with Brake Resistance Assembly using Coils with Different Resistance".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: essential drive

circuit components and configuration relative to the claimed “brake resistance” of the assembly in order to perform “brake resistance”. Absent a structural cooperative relationship interrelating the essential elements to perform “brake resistance”, such claim language fails to particularly point out and distinctly claim the invention in accordance with 35 U.S.C. §112, second paragraph.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 11-14 & 16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-125600 to ABE in view of U.S. Patent No. 5,508,671 to TAKASHI or U.S. Patent No. 5,138,293 to ISHIMARU. Re claims 11-14, ABE discloses an assembly comprising a case (electromagnet (16) readable on broad recitation of “case”), first and second connect terminals fixed to the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances (see abstract and Figures 1,2,3 & 5). Re claim 16, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined melting point and is capable of melting with a certain voltage. Re claim 17, the phrase “rugged part” is construed to read on any surface not perfectly smooth/polished (i.e. a surface having more surface

area than a perfectly smooth/polished surface). While the coils are not expressly disclosed as being wound around bobbins, the position is taken that it is common knowledge that electromagnet braking coils are conventionally wrapped around bobbins. Even if, *arguendo*, one were to argue that the coils are not common knowledge, the prior art is replete with structural equivalent coils expressly showing coils wrapped around bobbins, and the substitution of these coils would be within the level and skill of one having ordinary skill in the art. Evidence showing conventional braking coils wound around bobbins can be found in TAKASHI (col. 1, line 61 – col. 2, line 1) & ISHIMARU (col. 1, lines 63-68). Further regarding claim 17, assuming *arguendo* that one of ordinary skill in the art would not consider virtually any surface to read on the broadly recited “rugged” case surface, ISHIMARU expressly discloses a “rugged” surface (grooves 7b) with an increased surface capable of exchanging heat. Accordingly, recitation of the cited references reads on applicant’s claimed invention.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1-4 & 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,556,827 to ERDMAN *et al.* (hereinafter "ERDMAN") in view of ABE alone or in view of TAKASHI or ISHIMARU. In Figure 6, ERDMAN teaches a washing machine having a cabinet, drum, motor, and brake resistance assembly including a brake coil (130) connected to an external circuit and to a terminal (see also Figure 25).

While ERDMAN discloses a coil brake resistance assembly for controlling braking of a rotary motor, ERDMAN does not expressly disclose such assembly in a case with first and second coils of differing resistance wound around first and second bobbins and connected to first and second terminals. Re claims 1-4, ABE teaches that it is known to provide a braking assembly for a rotary motor in an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second connect terminals fixed to the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances in order to more effectively control a motor braking action (see abstract and Figures 1,2,3 & 5). Re claim 6, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined melting point and is capable of melting with a certain voltage. Re claim 7, the phrase "rugged part" is construed to read on any surface not perfectly smooth/polished (i.e. a surface having more surface area than a perfectly smooth/polished surface). While the coils are not expressly disclosed

as being wound around bobbins, the position is taken that it is common knowledge that electromagnet braking coils are conventionally wrapped around bobbins. Even if, *arguendo*, one were to argue that the coils are not common knowledge, the prior art is replete with structural equivalent coils expressly showing coils wrapped around bobbins, and the substitution of these coils would be within the level and skill of one having ordinary skill in the art. Evidence showing conventional braking coils wound around bobbins can be found in TAKASHI (col. 1, line 61 – col. 2, line 1) & ISHIMARU (col. 1, lines 63-68). Further regarding claim 7, assuming *arguendo* that one of ordinary skill in the art would not consider virtually any surface to read on the broadly recited “rugged” case surface, ISHIMARU expressly discloses a “rugged” surface (grooves 7b) with an increased surface capable of exchanging heat.

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to substitute the washing machine braking assembly of ERDMAN with the braking assembly of ABE in order to provide a rotary motor with a more effective control of a braking function in a rotary motor. Moreover, there would be a reasonable expectation of success in substituting one braking assembly for another in order to arrive at applicant’s claimed invention.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of ABE either alone or further in view of TAKASHI or ISHIMARU, and further in view of U.S. Patent No. 3,943,391 to FEHR. Recitation of ERDMAN, ABE, TAKASHI

and ISHIMARU are repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level of ordinary skill in the art.

12. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of ABE either alone or further in view of TAKASHI or ISHIMARU, and further in view of U.S. Patent No. 5,409,996 to SHINOHARA *et al.* (hereinafter "SHINOHARA"). Recitation of ERDMAN, ABE, TAKASHI & ISHIMARU is repeated here from above. While the combination at least teaches or suggest coil bobbins in an electromagnetic motor braking assembly, none of the references appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation

properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37).

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ERDMAN, ABE, TAKASHI & ISHIMARU with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires.

13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over ABE either alone or in view of TAKASHI or ISHIMARU, and further in view of U.S. Patent No. 3,943,391 to FEHR. Recitation of ABE, TAKASHI and ISHIMARU are repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to

provide different resistance between coils would be within the level and knowledge of ordinary skill in the art.

14. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE either alone or further in view of TAKASHI or ISHIMARU, and further in view of SHINOHARA. Recitation of ABE, TAKASHI & ISHIMARU is repeated here from above. While the combination at least teaches or suggest coil bobbins in an electromagnetic motor braking assembly, none of the references appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37).

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ABE, TAKASHI & ISHIMARU with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires.

Conclusion

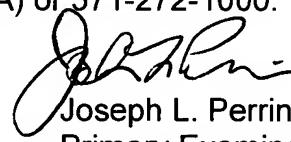
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent Nos. 4,532,459, 4,513,230, 4,449,077, & 4,390,826,

each to ERDMAN, which are substantially cumulative to ERDMAN above; U.S. Patent No. 5,913,952 to KIM *et al.*, which discloses a washing machine braking mechanism.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 7:00-4:30, except alternate Fridays.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Joseph L. Perrin, Ph.D.
Primary Examiner
Art Unit 1746